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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/566,924

02/01/2006

Steven Ian Pegg

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EXAMINER

LAM, HUNG Q

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MAIL DATE

DELIVERY MODE

11/01/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/566,924	Applicant(s) PEGG, STEVEN IAN	
	Examiner Hung Lam	Art Unit 2883	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>07/30/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 8-14 have been considered but are moot in view of the new ground(s) of rejection.

Status of the Application

Claims 8-14 are pending in this application.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on July 30, 2007 filled in compliance with the provisions of 37 CFR 1.97. The examiner has considered the information disclosure statement.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by **Kewitsch et al.** (US. Pat. 5,875,272).

Regarding claims 8 and 9, **Kewitsch et al.** anticipate a wavelength-selective optical signal processing device comprising signal processing device 63, comprising an outcoupling filter (in a grating assisted mode coupler 23) for decomposing an incoming wavelength multiplex 33 having a plurality of channels at different wavelengths from λ_1 to λ_8 into a first (λ_1) and a second (λ_2 to λ_8) group of channels; a processing unit 13 for carrying out a processing of the first group (λ_1) to obtain a processed first group; and an incoupling filter (in the grating assisted mode coupler 23) for combining the processed first group (λ_1) and the second (λ_2 to λ_8) group into an outgoing wavelength multiplex 53; the outcoupling filter and the incoupling filter having a common continuous wavelength-selective reflecting structure (grating) 23 operative for reflecting the first group (λ_1) from the incoming wavelength multiplex 33 into a first direction (upward arrow) and letting (transparent) the second group (λ_2 to λ_8) pass directly to a passing direction 53, and also operative for reflecting the first group (λ_1) arriving from a second direction (downward arrow) after having passed through the processing unit 13 into the passing direction 53 of the second group (col. 8, Example 2 and 3, and Fig. 5 and 6).

With specific reference to claim 9, **Kewitsch** further teaches that the detuning of the Bragg wavelength under an applied strain be induced by applying an electrical signal to a movable mount attached to one end of the coupler waist, as illustrated in FIG. 4.

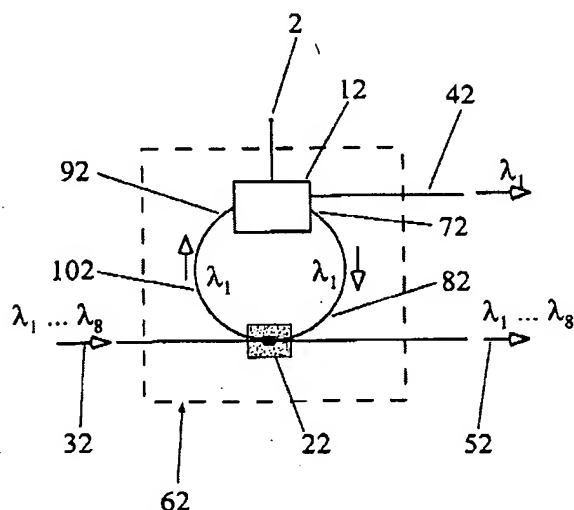


FIG. 5

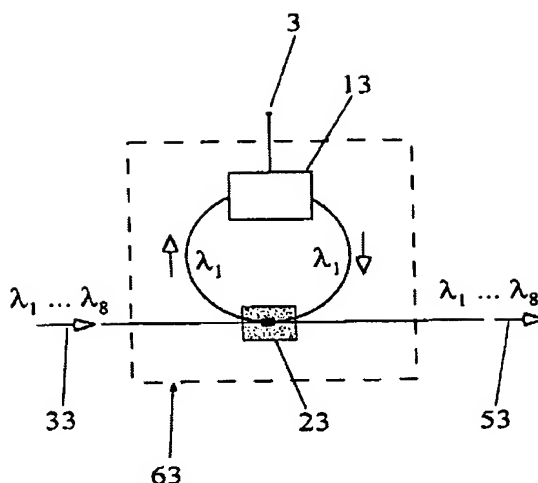


FIG. 6

Reproduced from US. Pat. 5,875,272.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

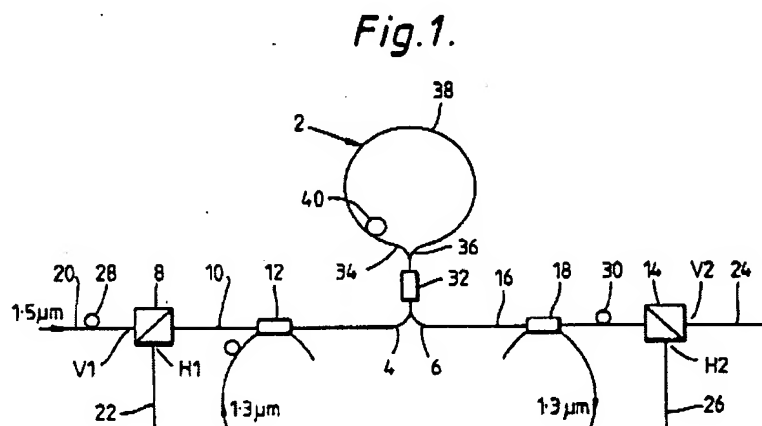
1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kewitsch et al.** (US. Pat. 5,875,272) in view of **Blow et al.** (US. Pat. 5,307,428).

Regarding claim 10, in accordance with the rejection of claim 8, **Kewitsch et al.** disclose claimed invention except for the wavelength-selective structure is a dichroic mirror.

Blow et al. disclose a dichroic coupler 32 a dichroic for coupling most of an optical signal received at one port of the first pair of ports at the second wavelength to one port of the other pair (col. 2 lines 11-15, col. 3 lines 59-62, claim 4, and Fig. 1).



Reproduced from US. Pat. 5,307,428.

It would have been obvious to the one having ordinary skill in the art at the time the invention was made to use the teachings of **Blow et al.** to modify the device of **Kewitsch et al.** in order to construct the tunable optical filtering device or a tunable frequency-selective optical unit with the dichroic optical coupler. The motivation for doing so because of this dichroic optical coupler operates same as the dichroic mirror, and this dichroic optical coupler is also

configured "... as possible for maximum efficiency and completeness of switching" (Blow et al. col. 3 lines 59-66).

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kewitsch et al.** (US. Pat. 5,875,272).

Regarding claim 11, in accordance with the rejection of claim 8, **Kewitsch et al.** do not explicitly disclose that at least one supervisory channel forms the first group, and an information channels is formed from the second group. However, it would have been obvious to the one having ordinary skill in the art at the time the invention was made to conclude that the first group contains a supervisory channel, and an information channels is formed from the second group. The motivation for saying so is because the whole incoming signal (a plurality of channels at different wavelengths) must be carried sort of information in its wavelength channels, then after spited into two group of channels, only group one which may contains at least one channel is to be under supervised of amplification process by unit 13 the other group of channels (group 2) which carry the rest of information is passed through the device. Therefore, it renders the obvious of claim 11.

Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kewitsch et al.** in view of **Ryu et al.** (US. Pat. 6,222,670).

Regarding claim 12, in accordance with the rejection of claim 8, **Kewitsch et al.** disclose claimed invention except for the limitation of at least one optical amplifier stage passed through by the entire incoming wavelength multiplex.

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Ryu et al. disclose an erbium doped fiber amplifier comprising first and second stages (EDF1 and EDF2), wherein the first stage EDF1 is connect to a coupler 22 (Fig. 3).

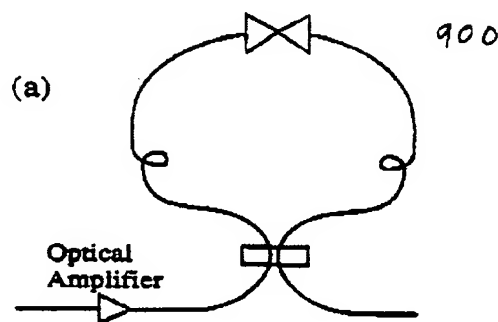
It would have been obvious to the one having ordinary skill in the art at the time the invention was made to use the teachings of **Ryu et al.** to modify the device of **Kewitsch et al.** with at least one optical amplifier stage passed through by the entire incoming wavelength multiplex. The motivation for doing so because of the optical amplifiers EDF1 and EDF2 are used "...for providing enhanced power conversion efficiency by utilizing amplified spontaneous emission as a secondary pumping light source" (Ryu et al. col. 1 lines 17-19) as "...provides an amplification gain in the higher wavelengths" and "...operating in a L-band range with enhanced power conversion efficiency and/or with optimized noise figure" (Ryu et al. col. 2 lines 1-2 and lines 18-19).

Regarding claim 13, in accordance with the rejection of claim 12 the optical amplifier described above is an erbium doped fiber therefore it will let the light signal pass (transparent) by in an unpumped stage.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kewitsch et al.** in view of **Islam** (US. Pub. 2004/0091204)

Regarding claim 14, in accordance with the rejection of claim 8, **Kewitsch et al.** disclose claimed invention except for the limitation of that device is a regenerating amplifier for an optical long distance cable.

Islam discloses an optical loop mirror in a regenerator system, wherein the loop comprises an optical amplifier in a relation with the length of the optical fiber cable over the long distance in the optical networks system ([0016], [0092]).



Reproduced from US. Pub. 2004/0091204.

It would have been obvious to the one having ordinary skill in the art at the time the invention was made to use the teachings of **Islam** with **Kewitsch et al.** in order to provide the regenerating amplifier to an optical long distance cable. The motivation for doing so because of the optical amplifier in the regenerator system is use to boost the optical signal to a certain level of signal to noise ratio that transmitting in the optical fiber cable over the long distance in the optical networks system (**Islam**, [0011], [0016], [0092]).

Cited Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Xu et al. (US. Pat. 6,381,049).

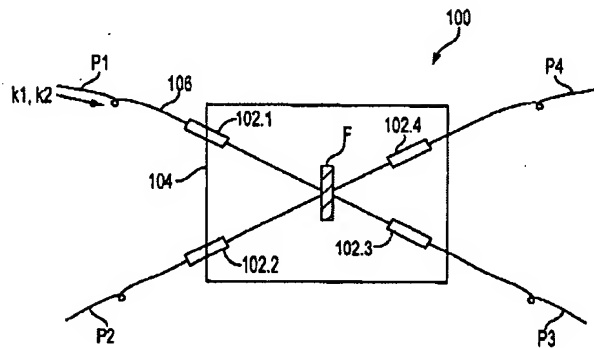


FIG. 5A

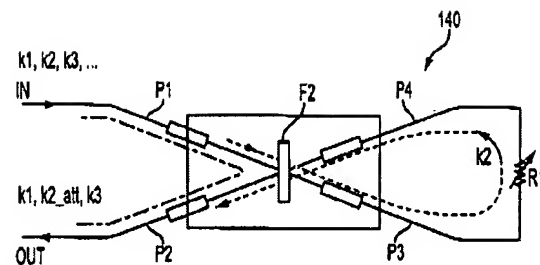


FIG. 6A

Reproduced from US. Pat. 6,381,049.

Kinoshita (US. Pat. 6,452,719).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Lam whose telephone number is 571-272-9790. The examiner can normally be reached on M - F 07:30 AM - 05:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on 571-272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

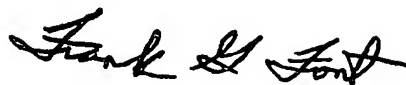
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like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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